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Application No.: 10/535,053

Docket No.: JCLA12543

In the Claims:

Claim 1 (currently amended) An electrodeionization apparatus, comprising:

a plurality of anion exchange membranes and a plurality of cation exchange membranes that are alternately arranged between a cathode and an anode to alternately form at least one concentrating compartment and at least one desalting compartment, wherein

the concentrating compartments and the desalting compartments are filled with mixed ion exchangers, and a filling ratio of anion exchanger to cation exchanger of the mixed ion exchanger in the concentrating compartments is higher than a filling ratio of anion exchanger to cation exchanger of the mixed ion exchanger in the desalting compartments.

Claim 2 (original) The electrodeionization apparatus according to claim 1, which comprises a plurality of concentrating compartments and a plurality of desalting compartments, wherein the filling ratio of anion exchanger to cation exchanger of the ion exchanger in the concentrating compartments ranges from 75/25 to 95/5.

Claim 3 (previously presented) The electrodeionization apparatus according to claim 1, wherein the ion exchanger in the concentrating compartment comprises a mixed ion exchange resin comprising an anion exchange resin and a cation exchange resin, wherein a crosslinking degree of the anion exchange resin is 3-8%, and a crosslinking degree of the cation exchange resin is 5-10% .

Claim 4 (previously presented) The electrodeionization apparatus according to claim 1, wherein a ratio of a water introduction rate (L/h) into the desalting compartment to an effective area (dm²) of the anion exchange membrane in the desalting compartment is 5 or higher.

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Claim 5 (previously presented) The electrodeionization apparatus according to claim 1, which satisfies at least one of the following two conditions (1) and (2):

(1) a ratio of a carbonate loading (mg-CO₂/h) into the desalting compartment to an effective area (dm²) of the anion exchange membrane in the desalting compartment being 80 or higher; and

(2) a ratio of a silica loading (mg-SiO₂/h) into the desalting compartment to an effective area (dm²) of the anion exchange membrane in the desalting compartment being 8 or higher.

Claim 6 (previously presented) The electrodeionization apparatus according to claim 1, wherein a current density of 300mA/dm² or higher is applied.

Claim 7 (previously presented) The electrodeionization apparatus according to claim 1, wherein the concentrating compartment is filled with an anion exchange resin that comprises a thermostable anion exchange resin.